IN THE CLAIMS

Please cancel claims 15-26 and 28-39 without prejudice.

Please amend the following of the claims which are pending in the present application:

1. (Currently amended)   A decision support method comprising:

for two or more pre-defined criteria, each criterion associated with one or more pre-defined and ordinally ranked categories, performing a comparative assessment of profiles each profile comprising a set of two or more of the criteria, each criterion in the set instantiated with one of the categories for that criterion, wherein the comparative assessment comprises the ordinal pairwise ranking of profile pairs, the ordinal pairwise ranking of profile pairs comprising ~~the steps of~~:

generating undominated profile pairs;

presenting undominated profile pairs to a decision maker for ordinal pairwise ranking;

receiving from the decision maker an ordinal ranking of the profiles in each profile pair presented; and

identifying profile pairs that are implicitly ordinally pairwise ranked as corollaries of ordinal pairwise rankings performed and excluding them from subsequent presentation to the decision maker;

the decision support method further comprising ~~the step of~~:

solving a system of equalities/inequalities that represents the ordinal

pairwise rankings to obtain at least one output.

2.   (Previously presented)   The decision support method of claim 1 wherein the at least one output comprises a point value for each category on each criterion.

3.   (Previously presented)   The decision support method of claim 1 wherein the at least one output comprises a ranking of all possible profiles.

4.   (Previously presented)   The decision support method of claim 1 wherein the at least one output comprises a ranking of a subset of all possible profiles.

5.   (Previously presented)   The decision support method of claim 1 wherein the step of identifying profile pairs that are implicitly ordinally pairwise ranked as corollaries of ordinal pairwise rankings already performed and excluding them from subsequent presentation to the decision maker comprises identifying all possible profile pairs that are implicitly ordinally pairwise ranked as corollaries of ordinal pairwise rankings already performed.

6.   (Previously presented)   The decision support method of claim 1 wherein the step of generating undominated profile pairs comprises:

    generating a set of undominated profile pairs with z criteria each, wherein z is greater than or equal to two and less than or equal to the number of possible

criteria.

7. (Previously presented) The decision support method of claim 6 wherein the ordinal ranking of profile pairs is repeated for at least one further value of z and wherein for any further value of z the step of generating a set of undominated profile pairs is followed by a step of excluding from the set any profile pairs that are pairwise ranked as corollaries of ordinal pairwise rankings performed for any previous value of z.

8. (Currently amended) The decision support method of claim 6 ~~or claim 7~~ wherein the step of generating a set of undominated profile pairs with z criteria each comprises the steps of:

forming all uninstantiated profiles with z criteria each by generating all unique subsets of the pre-defined criteria with z elements; and

for each uninstantiated profile formed, pairing it with a replica of itself to form an uninstantiated profile pair; and

instantiating the criteria of each uninstantiated profile pair with combinations of the pre-defined categories to form all unique undominated profile pairs with z criteria possible from the uninstantiated pair.

9. (Currently amended) The decision support method of claim 8 wherein the step of instantiating the criteria of an uninstantiated profile pair comprises the

steps of:

listing the numbers between 1 and $2^{z-1} - 1$ in binary form using z bits <u>as a list of first z-tuples</u>, and pairing each ~~binary form~~ <u>first z-tuple</u> with a further ordered z-tuple of bits, wherein each '0' or '1' of the further ordered z-tuple is the complement of each of the original z bits <u>of the first z-tuple</u>, to form $2^{z-1} - 1$ pairs of ordered z-tuples of bits; and

for each pair of ordered z-tuples of bits generating a copy of the uninstantiated profile pair and forming an undominated profile pair by instantiating each of the z criteria of a first profile in the pair according to the relative magnitudes of the bits in the first z-tuple and instantiating each of the z criteria of the second profile in the pair according to the relative magnitudes of the bits in the further z-tuple.

10. (Currently amended)   The decision support method of ~~any one of claims 1 to 10~~ <u>claim 1</u> comprising the further step of excluding undominated profile pairs that are theoretically impossible.

11. (Currently amended)   The decision support method of ~~any one of claims 1 to 10~~ <u>claim 1</u> wherein the step of generating undominated profile pairs comprises the further step of:

generating all possible undominated profile pairs that are consistent with a pre-defined subset of all possible profiles, and storing them on a temporary list;

and wherein the decision support method comprises the further steps of:

when an ordinal pairwise ranking of profile pairs is received from the decision maker, removing all members of the temporary list that are implicitly ordinally pairwise ranked as corollaries of any ordinal pairwise rankings of profile pairs already performed; and

when the temporary list is empty, solving the system of equalities/inequalities representing the ordinal pairwise rankings to rank the pre-defined subset of profiles.

12. (Currently amended) The decision support method of ~~any one of claims 1 to 10~~ claim 1 wherein the step of generating undominated profile pairs comprises the further step of:

generating all possible undominated profile pairs that are consistent with a pre-defined subset of all possible profiles, and storing them on a temporary list;

and wherein the decision support method comprises the further steps of:

when an ordinal pairwise ranking of profile pairs is received from the decision maker, removing all members of the temporary list that are implicitly ordinally pairwise ranked as corollaries of any ordinal pairwise rankings of profile pairs already performed; and

solving the system of equalities/inequalities representing the ordinal pairwise rankings to rank the pre-defined subset of profiles and designating profiles that cannot be ranked below any other profile as top-ranked profiles;

wherein the process of ordinal pairwise ranking is halted once the temporary list contains no undominated profile pair for which one profile in the pair is one of the top-ranked profiles and the other profile in the pair is not a top-ranked profile, and the number of top-ranked profiles is less than or equal to a required number of top-ranked profiles.

13.   (Previously presented)   The decision support method of claim 1 wherein the step of identifying undominated profile pairs that are implicitly ordinally pairwise ranked as a corollary of ordinal pairwise rankings already performed comprises repeating, for each undominated profile pair not yet presented to the decision maker, the steps of:

imposing a strict ordinal ranking of the profiles in the profile pair, and including the resulting inequality with the system of equalities/inequalities that represents the ordinal pairwise rankings of profile pairs already performed; and

testing the system of equalities/inequalities for the existence of a solution in terms of point values

wherein if a solution does not exist, then the profile pair is identified as implicitly ordinally pairwise ranked as a corollary of ordinal pairwise rankings already performed but wherein, if a solution does exist, then the method comprises the further steps of:

for the same profile pair, imposing the reverse strict ordinal ranking of the profiles in the profile pair, and including the resulting inequality with the

system of equalities/inequalities representing the ordinal pairwise rankings of profile pairs already performed; and

testing the system of equalities/inequalities for the existence of a solution in terms of point values

wherein if a solution does not exist, then the profile pair is identified as implicitly ordinally pairwise ranked as a corollary of ordinal pairwise rankings already performed, but wherein if a solution does exist, then the profile pair is identified as not implicitly ordinally pairwise ranked as a corollary of ordinal pairwise rankings already performed.

14.   (Currently amended)   A decision support system comprising:

two or more pre-defined criteria stored in data memory, each criterion capable of being instantiated with one or more pre-defined and ordinally ranked categories; and

a processor programmed to perform a comparative assessment of profiles each profile comprising a set of two or more of the criteria, each criterion in the set instantiated with one of the categories for that criterion, wherein the comparative assessment comprises the ordinal pairwise ranking of profile pairs, the ordinal pairwise ranking of profile pairs comprising the steps of:

generating undominated profile pairs;

presenting undominated profile pairs to a decision maker on a display;

receiving from the decision maker via an input device an ordinal

ranking of the profiles in each profile pair presented on the display; and

identifying profile pairs that are implicitly ordinally pairwise ranked as corollaries of ordinal pairwise rankings performed and excluding them from subsequent presentation to the decision maker;

the processor further programmed to solve a system of equalities/inequalities that represents the ordinal pairwise rankings to obtain at least one ~~ouput~~ output.

15-26.   (Cancelled)

27.   (Currently amended)   A decision support computer program comprising:

for two or more pre-defined criteria stored in data memory, each criterion capable of being instantiated with one or more pre-defined and ordinally ranked categories, computer executable instructions for performing a method for a comparative assessment of profiles each profile comprising a set of two or more of the criteria, each criterion in the set instantiated with one of the categories for that criterion, wherein the comparative assessment comprises the ordinal pairwise ranking of profile pairs, the ordinal pairwise ranking of profile pairs comprising ~~the steps of~~:

generating undominated profile pairs;

presenting undominated profile pairs to a decision maker on a display;

receiving from the decision maker via an input device an ordinal

ranking of the profiles in each profile pair presented on the display; and

identifying profile pairs that are implicitly ordinally pairwise ranked as corollaries of ordinal pairwise rankings performed and excluding them from subsequent presentation to the decision maker;

the decision support computer program further comprising computer executable instructions for solving a system of equalities/inequalities that represents the ordinal pairwise rankings to obtain at least one ~~ouput~~ output.

28-39.   (Cancelled)